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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/723,722

11/26/2003

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EXAMINER

HOFFBERG, ROBERT JOSEPH

ART UNIT

PAPER NUMBER

2835

DATE MAILED: 06/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

A

<b>Office Action Summary</b>	<b>Application No.</b> 10/723,722	<b>Applicant(s)</b> BHATTACHARYA ET AL.	
	<b>Examiner</b> Robert J. Hoffberg	<b>Art Unit</b> 2835	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 2-4, 6-16, 18-25, 27 and 30-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-4, 6-16, 18-25, 27 and 30-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/26/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/23/06</u> | 6) <input type="checkbox"/> Other: _____  |

***Detailed Action***

***Response to Arguments***

1. Applicant's arguments with respect to claims 2-4, 6-16, 18-25, 27, 30-33 has been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 4 and 18-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 4 and 18 are dependent on antecedent claims that require a first surface and a second surface to be different surfaces. It is contradictory to have a further limitation that requires the different surfaces to be the same surface. Examiner understands for examination purposes that an outlet vent is on a first portion of a first surface and inlet vent is on a second portion of the first surface.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 2-3, 6-8, 11-12, 25, 27, 34 and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Pokharna (US 6,801,430).

With respect to Claim 34, Pokharna teaches an apparatus comprising a board (Fig. 2, #204); an integrated circuit (#206) coupled to the board; a case (#202), encasing the integrated circuit and the board; and a thermal management arrangement including a vent (#212) on the case to at least facilitate an exhaust of heat convectively emitted from the integrated circuit into an ambient, and a flow generating device (#208) coupled to the board to provide an air current (see Fig. 2) to at least facilitate the exhaust of the convectively emitted heat through the vent. Regarding the case having a form factor including a plurality of external dimensions compatible with an industry standard having a plurality of specifications governing the form factor and the external dimensions, it is inherent to produce an apparatus having a case within the electronic field that is compatible with industry standards.

With respect to Claim 2, Pokharna further teaches that the vent is an outlet vent (#212), disposed on a first portion of a first surface (Fig. 2, lower portion of left side of #202) of the case.

With respect to Claim 3, Pokharna further teaches that an inlet vent (#210) disposed on a second portion of a second surface (Fig. 2, right side of bottom of #202) of the case, to facilitate an intake of air from the ambient.

With respect to Claim 6, Pokharna further teaches that the flow generating device is positioned substantially near (see Fig. 2) the inlet vent.

With respect to Claim 7, Pokharna further teaches that the flow generating device comprises a jet actuator (#208).

With respect to Claim 8, Pokharna further teaches that that the jet actuator comprises a selected one of a piezoelectric synthetic jet actuator or an electromagnetic synthetic jet actuator (Fig. 3, #302).

With respect to Claim 11, Pokharna further teaches that at least one partition (#204) disposed inside the case using available space to provide a plurality of air flow chambers (Fig. 2, above and below #204 and vertical line on left side of #210).

With respect to Claims 12, Pokharna further teaches that the flow generating device and at least a portion of the integrated circuit are located substantially in a first air flow chamber (Fig. 2, below #204).

Regarding method claims 25, 27 and 37: the method steps recited in the claims are obviously necessitated by the device structure as taught by Pokharna.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 4, as best understood by examiner, is rejected under 35 U.S.C. 103(a) as being unpatentable over Pokharna (US 6,801,430) in view of Katooka et al. (US 5,424,915).

Pokharna teaches the claimed invention, but fails to teach outlet and inlet vents on the same surface. Katooka teaches that the first and second surfaces are of the same surface (Fig. 5, #1 right side). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the case of Pokharna with that of Katooka et al. by providing the vents on the surface when remaining sides may be blocked by the operating environment to facilitate airflow.

8. Claims 9-10, 13-16 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pokharna (US 6,801,430).

With respect to Claim 9, while Pokharna discloses the claimed invention except that the jet actuator is smaller than 5.5 mm (Col. 2, line 47). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a jet actuator that is approximately between 2-3 mm high or any size which would allow the apparatus to operate at maximum efficiency, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

With respect to Claim 10, while Pokharna discloses the claimed invention except for the range of input power of the jet actuator. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a jet actuator that operates on input power of approximately between 10 and 50 milliwatts or any range which would allow the apparatus to operate at maximum efficiency, since it has been held that where the general conditions of a claim are disclosed in the prior art,

discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

With respect to claims 13-14, Pokharna discloses the claimed invention and further teaches that the first airflow chamber is flow-coupled to the second air flow chamber (see Fig. 2). Pokharna fails to teach that a first air flow chamber defined in part by the second portion of the second surface on which the inlet vent is disposed and the first portion of the first surface on which the outlet vent is disposed defines a second air chamber. It would have been obvious to one having ordinary skill in the art at the time the invention was made to reverse the first air flow chamber with the second air flow chamber with the inlet vent disposed in the second air chamber and outlet vent disposed in the first air chamber (see Fig. 2), since it has been held that a mere reversal of the essential parts of a device involves only routine skill in the art. *In re Gazda*, 219 F.449, 104 USPQ 400 (CCPA 1955).

With respect to Claims 15-16, Pokharna teaches the claimed invention, but fails to teach that the apparatus forms a PC Card for use as a data storage device or a communication adapter. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

With respect to Claim 35, Pokharna discloses the claimed invention except for at least one partition connected to the board. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the partition and

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the board into a single element, since it has been held as obvious of one skilled in the art at the time of the invention to make two separate elements integral. *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965).

9. Claims 30-33, 36 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US 6,031,718) in view of Pokharna (US 6,801,430).

With respect to Claim 36, Suzuki et al. teaches a standardized peripheral apparatus comprising: a board (Fig. 17, #3); an integrated circuit (#6a) coupled to the board; a case (#2), encasing the integrated circuit and the board, having an outlet vent (#20b) disposed on a first portion of a first surface (Fig. 17, left side of #2 bottom) of the case to facilitate exhaust of heat convectively emitted from the integrated circuit, into an ambient; and an inlet vent (#20a) disposed on a second portion of a second surface (Fig. 17, left side of #2 top) of the case, to facilitate an intake of air from the ambient; and a connector (#7), to directly couple the standardized peripheral apparatus to a host device in a substantially rigid relationship. Suzuki et al. fails to teach a flow generator in this embodiment. Pokharna teaches flow generating device (#208) disposed inside the case, to at least facilitate an air flow (see Fig. 2) over the integrated circuit (#206) in a general direction (see Fig. 2) from the inlet vent (#210) to the outlet vent (#212).

With respect to Claim 38, Suzuki et al. teaches a system comprising: a host device (Col. 1, line 53); a standardized peripheral device including electronic circuitry including an integrated circuit (#6a); a case (#2) encasing the electronic circuitry; the case having a form factor (Col. 1, lines 15-17) including a plurality of external dimensions compatible with an industry standard having a plurality of specifications



governing the form factor and the external dimensions; and a thermal management arrangement including a vent (#20b) on the case to at least facilitate an exhaust of heat convectively emitted from the integrated circuit into an ambient and a connector (#7), to couple the standardized peripheral device to the host device. With respect to Claim 30, Pokharna further teaches that the synthetic jet actuator is elected one a piezoelectric type or an electromagnetic type (Fig. 3, #302). With respect to Claim 31, Suzuki further teaches that the electronic circuitry includes a communication interface adapter (Col. 1, lines 20-21). With respect to Claim 33, Suzuki further teaches that the connector is a 32-bit Cardbus connector (Col. 1, lines 15-17). Suzuki et al. fails to teach a flow generating device and a case having a form factor meeting industry specifications. Pokharna teaches a flow generating device (#208) coupled to the board (#204) to provide an air current (see Fig. 2) to at least facilitate the exhaust of the convectively emitted heat through the vent (#212).

With respect to Claims 32, Suzuki in view of Pokharna teach the claimed invention, but fail to teach that the host device is a set-top box, a mobile phone, a digital camera or a personal digital assistant. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

It would be obvious to one skilled in the art to modify the peripheral apparatus of Suzuki et al. with the flow generating device as taught by Pokharna in order to increase the airflow to increase heat dissipation of the integrated circuit.

10. Claims 18-23, as best understood by examiner, are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US 6,031,718) in view of Pokharna (US 6,801,430) as applied to claim 36 above, and further in view of Katooka et al. (US 5,424,915).

With respect to Claim 18, Suzuki et al in view of Pokharna teach the apparatus of claim 36 above, but fail to teach outlet and inlet vents on the same surface. Katooka teaches that the first and second surfaces are of the same surface (Fig. 5, #1 right side).

With respect to Claim 19, Pokharna further teaches that the flow generating device is positioned substantially near (see Fig. 2) the inlet vent.

With respect to Claim 20, Pokharna further teaches that the flow generating device includes a synthetic jet actuator (#208).

With respect to Claim 21, Pokharna further teaches that that the synthetic jet actuator is elected one a piezoelectric type or an electromagnetic type (Fig. 3, #302).

With respect to Claim 22: Suzuki et al. in view of Pokharna and further in view of Katooka et al. teach discloses the claimed invention except for the range of input power of the jet actuator. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a jet actuator that operates on input power of approximately between 10 and 50 milliwatts or any range which would allow the apparatus to operate at maximum efficiency, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

With respect to Claim 23, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the case of Suzuki et al. in view of Pokharna with the vent arrangement as taught by Katooka et al. to locate the inlet and outlet vents on the same surface when the remaining sides are blocked by the operating environment, in order to enhance the heat dissipation.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Behl (US 5,862,037), Cheng (US 5,898,568) teach cases meeting industry standards having inlet and outlet vents on the same side having a partition. Cheng (US 6,034,871) teaches a case having inlet and outlet vents on the same surface having a partition.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert J. Hoffberg whose telephone number is (571) 272-2761. The examiner can normally be reached on 8:30 AM - 4:30 PM Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn D. Feild can be reached on (571) 272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MICHAEL DATSKOVSKIY  
PRIMARY EXAMINER

RJH *RJH*

*Michael Datskovskiy*  
06/09/06